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Development of clinical evaluation competence of critically ill patients by Nursing students: contribution of Simulation

Desenvolvimento da competência de avaliação clínica do paciente crítico por acadêmicos de enfermagem: contribuição da Simulação

Desarrollo de la competencia de evaluación clínica de pacientes en estado crítico por estudiantes de enfermería: contribuciones de la Simulación

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ABSTRACT

Objective: to analyze, from the perspective of the Historical-Cultural approach, the translation of knowledge from the clinical evaluation of critically ill patients in Intensive Care by the nursing academic, in a real environment, with clinical simulation as a facilitator of the learning process. **Method:** qualitative and analytical study, supported by the Vigotski Historical-Cultural framework, developed with students of the subject Curricular Internship of the undergraduate nursing course of a public university in southern Minas Gerais. Data collection was performed in three stages: Clinical Simulation, Participant Observation at the Intensive Care Center and Focus Group. **Results:** two categories were built: "The singularity of the subject who learns" and "Simulation as a tool for knowledge translation". **Conclusion and implications for practice:** simulation as a psychological instrument in the Historical-Cultural perspective contributed to the development of the superior psychological functions of the students to evaluate and implement care actions in the real scenario of intensive care. This strategy cannot be conceived in isolation and disjointed from interrelated factors that take place in the sociocultural field and that imply in the trajectories of human development.

Keywords: Clinical Competence; Nursing; Learning; Simulation Training; Nursing Education.

RESUMO

Objetivo: analisar, sob a ótica da abordagem Histórico-Cultural, a translação do conhecimento da avaliação clínica do paciente crítico em Terapia Intensiva pelo acadêmico de enfermagem, em ambiente real, tendo a simulação clínica como facilitadora do processo de aprendizagem. **Método:** estudo qualitativo e analítico, apoiado no referencial Histórico-Cultural de Vigotski, desenvolvido com acadêmicos da disciplina Estágio Curricular do curso de graduação em enfermagem de uma universidade pública do sul de Minas Gerais. A coleta de dados foi realizada em três etapas: Simulação Clínica, Observação participante no Centro de Terapia Intensiva e Grupo Focal. **Resultados:** foram construídas duas categorias: "A singularidade do sujeito que aprende" e "Simulação como ferramenta para translação do conhecimento". **Conclusão e implicações para a prática:** a simulação como instrumento psicológico na perspectiva Histórico-Cultural contribuiu para o desenvolvimento das funções psicológicas superiores dos acadêmicos para avaliarem e implementarem ações de cuidado em cenário real da Terapia Intensiva. Essa estratégia não pode ser concebida de modo isolado e desarticulado de fatores inter-relacionados que se dão no campo sociocultural e que implicam nas trajetórias do desenvolvimento humano.

Palavras-chave: Competência Clínica; Enfermagem; Aprendizagem; Treinamento por Simulação; Educação em Enfermagem.

RESUMEN

Objetivo: analizar, desde la perspectiva del enfoque Histórico-Cultural, la traducción del conocimiento de la evaluación clínica de pacientes en cuidados intensivos por parte del académico de enfermería, en un entorno real, con la simulación clínica como facilitador del proceso de aprendizaje. **Método:** estudio cualitativo y analítico, apoyado por el marco Histórico-Cultural Vigotski, desarrollado con estudiantes de la materia Pasantía Curricular del curso de pregrado de enfermería de una universidad pública en el sur de Minas Gerais. La recolección de datos se realizó en tres etapas: simulación clínica, observación participante en el centro de cuidados intensivos y grupo focal. **Resultados:** se construyeron dos categorías: "La singularidad del sujeto que aprende" y "Simulación como herramienta para traducir el conocimiento". **Conclusión e implicaciones para la práctica:** la simulación como instrumento psicológico en la perspectiva Histórico-Cultural contribuyó al desarrollo de las funciones psicológicas superiores de los estudiantes para evaluar e implementar acciones de atención en el escenario real de cuidados intensivos. Esta estrategia no puede concebirse en términos aislados ni desarticulada de factores interrelacionados que tienen lugar en el ámbito sociocultural y que inciden en el trayecto del desarrollo humano.

Palabras clave: Competencia Clínica; Enfermería; Aprendizaje; Entrenamiento Simulado; Educación en Enfermería.

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INTRODUCTION

The clinical assessment of the critical patient by the nurse qualifies care, since it constitutes the basis that underlies the care process. Without this stage, nurses would follow routines and deliver fragmented and reductionist care, which would compromise patient's safety.[1,2]

Professors have sought to use pedagogical strategies such as clinical simulation, since traditional teaching methods in isolation do not meet the need for training the nurses' skills,[3] understood as an imbricated integration of knowledge, skills, and attitudes that translate into the practice in the daily work.[4]

As an active methodology, clinical simulation enables the insertion of students in their learning process by allowing for the demonstration of their knowledge. However, the development of competence in its broad sense is only enhanced by real clinical practice, where the students can improve and apply knowledge, which allows the construction of their professional identity.[5]

Thus, it can be said that the translation of knowledge is imperative in the current scenario, as long as it affects behavior change in professional praxis,[6] with a view to providing effective and safer care for the benefit of the patients and the professionals involved in this process.[2]

With this understanding, the Historical-Cultural approach[7] contributes to a different analysis on the development of the students' clinical competence. This framework, theorized by Vygotski, proposes a critical view on the constitution of the human psyche in order to overcome dualistic views on the psychological formation of man, at times taken only as a pre-formed and a-historical element, whose development follows a natural course, independent of the social and cultural aspects that circumscribe it, and at other times assumed as the product of an equation, in which human behavior translate a sum of reflexes.[7]

The criticism established by the author starts from the assumption that the human constitution is a historically constituted and culturally mediated process. It is a dialectical, revolutionary process, which translates a continuous clash between primitive, eminently biological forms and cultural forms, the human social productions that come from the historical needs of social life.[7] In other words, human cultural development has a close relation with the appropriation of the elements of culture, produced and manifested in the social sphere and with the mediation of the signs and of the Other.

The Other is a condition for the development of Higher Psychological Functions (HPFs), since these functions come from social relations internalized by the subject.[8] From this perspective, signs can be considered as tools, stimuli artificially created by man and used as a means of dominating behavior, of oneself or of the Other, and its use brings transformations in the psychic sphere, in terms of the development of functions.[7]

This view provokes another way of conceiving learning, as a fundamental aspect in the process of developing culturally established and specifically human functions.[9] That is, the psychological functions that allow man to understand the phenomena of the world come from cultural development, which is a process intrinsically related to the collaboration of other individuals, socially situated, for the personal reconstruction of experience and meanings.[9]

Based on the understanding that the clinical competence of nurses reflects the voluntary use of complex psychological functions, and their development is inherent to the learning processes, it is questioned to what extent Clinical Simulation can be an instrument that enhances this development.

From these notes, this study aims to analyze, from the perspective of the Historical-Cultural approach,[7] the translation of knowledge of the critical patient's clinical assessment in Intensive Care by the Nursing student in a real environment, with clinical simulation as a facilitator of the learning process.

METHOD

A qualitative and analytical study, supported by Vygotski's Historical-Cultural framework,[7] developed with students from the Curricular Internship II subject of the Nursing Undergraduate Course at a public university in the south of Minas Gerais.

The Nursing course has an academic load of 4,155 hours, divided into nine semesters. During the last two semesters, the subjects of Curricular Internship I and II are offered, with 840 hours, of which 420 are devoted to the hospital area. In this study, the students regularly enrolled in the Curricular Internship II subject were invited, since they are already considered pre-professionals and a more advanced stage of development of clinical skills is expected from them.

It is worth clarifying that these students have already experienced clinical simulation in the subject of Nursing in Medical and Surgical Clinic, offered in the seventh semester of the course.

In the first semester of 2017, Curricular Internship II students were staggered in pairs or trios to the Intensive Care Unit in the morning and afternoon periods. In order for everyone to have the opportunity to experience this scenario, the students were divided into two groups, the first one carried out the internship from February to April and the other, from April to June 2017. It should be noted that this was the first internship experience in this sector.

Although the Clinical Evaluation Simulation of Critical Patient activity was part of the internship schedule, the students were informed that participation in the research was voluntary.

Of the 19 students enrolled in the subject, two refused the invitation, claiming previous negative experiences with the simulation and three did not complete all the stages of the research, which made inclusion unfeasible. Thus, 14 students participated in the study and signed the Informed Consent Form after due clarification by the researcher.

Data collection was carried out from February to June 2017 in three stages: clinical simulation, participant observation, and focus group. Simulation training was developed in the university's simulation laboratory; the participant observation took place in the Adult Intensive Care Unit of a general hospital, affiliated to the university and the focus group in the auditorium of the hospital.

The clinical simulation laboratory has a structure similar to a critical care unit, with high-fidelity mannequin, equipment such as simulated multi-parameter monitor, infusion pump, and emergency car with automatic external defibrillator, among other resources. The simulated scenario also has a spy mirror, which guarantees greater reliability to the strategy, as shown in Figure 1.

Simulation training was carried out prior to each group's internship, that is, the first session in February and the second in April, and based on the following stages: informative session, introduction to the environment, informative meeting on the simulator (briefing), theory entry, informative meeting about the simulated scenario, scenario/session of the simulation and debriefing.[10]

In the information session, the only non-face-to-face stage, the students had access to the didactic material referring to the clinical evaluation of the critical patient for study, fifteen days before the simulation and by electronic means.

The other stages took place during two days. On the first day, the introduction to the environment and an informative meeting about the simulator took place, and the students had the opportunity to recognize the simulated scenario and to clarify questions. Then, the theory was entered and the content on the clinical evaluation of the critical patient was taught through dialog with the lead researcher. These three stages corresponded to an academic load of 8 hours.

At the informative meeting on the simulated scenario, lasting five minutes, the student received the fictional shift from a patient by the nurse on duty, represented by the lead researcher, who provided information on identification data, reason for hospitalization, diagnostic hypothesis, and relevant personal background.

The case referred to a 60-year-old male patient with a diagnostic hypothesis of septic shock with pulmonary focus. He was hemodynamically unstable, hypotensive even with vasoactive drugs, with a cardiac rhythm of atrial fibrillation with a high ventricular response, and with invasive devices such as endotracheal tube, invasive blood pressure, central venous catheter, among other equipment.

Figure 1. Simulated scenario of Intensive Care. Alfenas, MG, Brazil, 2017
Source: Personal file of the corresponding author

The student was informed that he had a form for recording the clinical evaluation based on the Theory of Basic Human Needs by Wanda de Aguiar Horta,[11] which is consistent with the philosophical framework of the course.

In addition to the clinical evaluation form, a fictitious medical record was made available with information such as medical prescription, laboratory tests, and chest radiography.

The objectives of the activity were to evaluate the patient and to record the information in the medical chart. The student was expected to recognize signs of clinical deterioration, clinical judgment, non-technical skills such as verbal and non-verbal communication, posture, organization, guarantee of privacy, and establishment of priorities for evaluation.

In the simulation session, the students individually performed the evaluation of the patient admitted to the Intensive Care Unit in fifteen minutes. In order for all the students to have the same learning opportunity, the activity was not attended by the other colleagues.

The debriefing session was carried out in the laboratory at the end of the simulation, with the participation of the 14 students, collectively and with three researchers, two observers and one responsible for conducting the discussion. The following stages were completed: description, analysis/analogy, and implementation or transfer.[12] The students had the opportunity to share the simulation experience, to point out what they could have done better, and to correlate the activity with the clinical practice. The debriefing session lasted 30 minutes, was recorded, and transcribed in a text editor program, which generated 31 pages of testimonials.

The participant observation aimed to analyze the clinical evaluation performed by the student in the practice in a real environment. This stage took place from February to June 2017 at the Adult Intensive Care Adult. The observation was carried out by the lead researcher, who acts as supervisor of the students of the Curricular Internship.

In this observation, it was expected that the student would demonstrate technical skills, that is, to perform the clinical evaluation using data from the anamnesis in the medical record, shift change, and physical examination, according to basic human needs. In addition, non-technical skills such as verbal and non-verbal communication, posture, organization, guarantee of privacy and establishment of priorities for evaluation were expected.

To record the observations, the field diary was used, which was transcribed in a text editor and generated 20 typed pages.

The focus group, the last stage of data collection, was carried out at the end of each stage of the internship, on a date previously scheduled with the participants, in the auditorium of the hospital, lasting 30 minutes, conducted by the lead researcher, and with the participation of a mediator and an observer, which are course professors. The following triggering question was used: For you, what did the clinical simulation of critical patient assessment represent for the development of activities in the internship?

The testimonials were recorded with audio resources by means of three digital recorders and transcribed in a text editor, totaling 42 pages of testimonials.

Figure 2 summarizes the three stages taken to obtain the data.

For the organization of data, content analysis was adopted in the thematic mode, since it uses non-frequent indicators and thus allows inferences. This takes into account not only the frequency of appearance of the index (unit of record), but its importance in supporting the results.[13]

The three stages were accomplished: pre-analysis, exploration of the material, and treatment of the results and interpretation.[13]

Pre-analysis: the analysis corpus was composed of data from simulation/debriefing session, from the field diary, and from the focus group, which generated 93 pages. A floating reading of the documents was carried out, which allowed the authors to elaborate a table with columns for later coding.

The exploration of the material consisted of coding the registration units, inductively, following the treatment of results and interpretation, in the light of the Historical-Cultural approach.[7] In this phase, excerpts related to the historical and cultural being, sign and instruments, learning, and development were encoded.

Thus, the registration units were grouped according to their similarity and, from this analysis, two categories were constructed.

The ethical aspects were respected, and approval was obtained by the University's Research Ethics Committee (CAAE 61544616.9.0000.5142.) To guarantee anonymity, the names of the participants were replaced by acronyms, consisting of the letters AC (standing for "*Acadêmico*", "student" in Portuguese), followed by Arabic numerals (example: AC 01).

RESULTS

From the data analysis, the following categories were constructed: "The singularity of the subject who learns" and "Simulation as a tool for translating knowledge".

The singularity of the subject who learns

In this category, it was sought to highlight how personal experiences, training, and especially simulation, participated in the learning process.

For AC 05, the real environment of the Intensive Care Unit exacerbated feelings of nervousness that were not mitigated with the simulation prior to the insertion in the internship:

> *[...] there at the ICU, on the first day, I felt really bad [...] my blood pressure dropped, I was really afraid of the environment, that environment terrified me a lot, and yet, I didn't leave the nurse's side, I looked like a child grabbing her mother's hand, [...] then I saw that I was able to position myself in the face of a situation, of a problem, of an attitude that I had to take. On the second day, but the first was... [...] even having done the simulation* (Focus Group; AC 05).

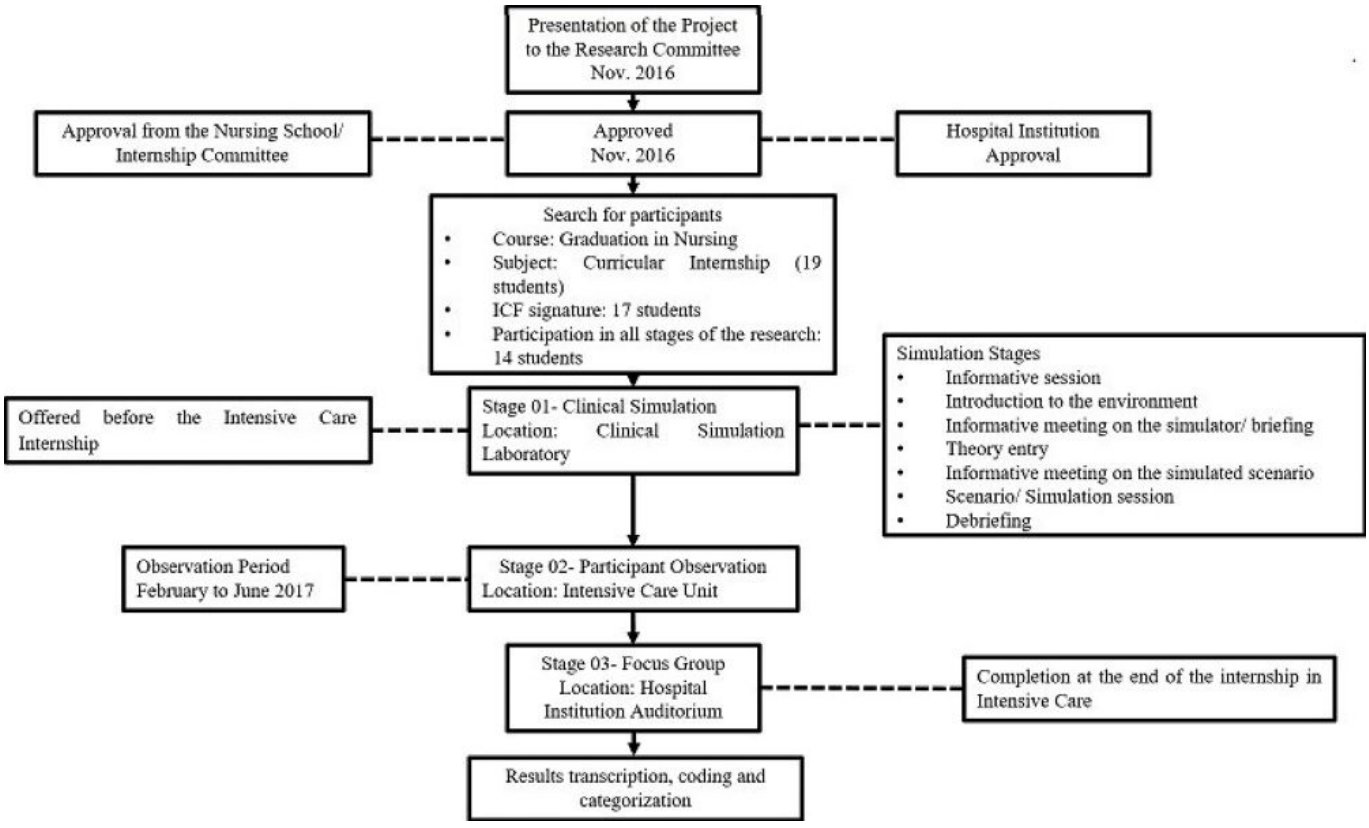

Figure 2. Flowchart of the stages of the methodological procedure. Alfenas, MG, Brazil, 2017
Source: Elaborated by the authors

For other participants, as an evaluation method in previous disciplines, simulation contributed to a negative conception of this strategy:

> *[...] we have simulation, but as an evaluation method. And that is terrorism, Our Lady! We get really nervous and it's terrifying* (Debriefing, AC 14).

However, although AC 05 also expresses nervousness about the strategy, it was a driving force and necessary for learning:

> *[...] it provokes us. It's what instigates people to study, to want to learn* (Debriefing, AC 05).

In this sense, previous experiences reported by AC 01 in a simulated environment during the exchange he performed during graduation in the international scenario, favored the training of non-technical skills such as emotional control.

> *[...] the two simulations I did in the United States were in the physical examination subject. Everything I did, at any time [refers to the study simulation] I felt pressured* (Debriefing, AC 01).

In a real scenario, it was observed that the clinical evaluation skills addressed by the simulation were built in a unique way by each of the participants, as they are at different levels of development, which translate into unique trajectories.

It was verified that some students have appropriated clinical evaluation as another task of the internship, that is, with a fragmented view of care:

> *[...] my attention was drawn to the way in which two students carried out the nursing visit. One had a clipboard and was filling the shift change form (with his back to the patient) while the other informed about the devices. When asked, they replied that in this way it was easier to fill out the internship papers* (Field diary; May, 2017).

Others managed to transpose what they learned in the simulation to a real situation, that is, they set in motion functions of comparison and abstraction:

> *[...] after evaluating a patient diagnosed with septic shock with pulmonary focus, the student said: this auscultation is just like that of the mannequin that we did the simulation with. Despite using simulation as an instrument for clinical evaluation, AC 03 was at a level of development that didn't allow for the advance to the next stage, decision making, being necessary to point out the need for endotracheal aspiration* (Field diary; March, 2017).

AC 01 advanced to the conduct domain since, by means of the clinical evaluation, he was responsible for initiating emergency care for a patient, according to the narrative performed by the student himself during the shift change, recorded in the field diary:

> *[...] at 8 am, I evaluated the patient, performed Glasgow, checked the pupils. At 10 am, he was undergoing hemodialysis, I looked at him and I knew he was not well. I performed the Glasgow scale again and it was at 8. I called the physiotherapist; he called the doctor and we intubated the patient. He didn't have a cardiac arrest* (Field diary; March, 2017).

Simulation as a tool for knowledge translation

Simulation emerged as an important resource for building clinical skills in the assessment of critical patients, as seen in the excerpts obtained from AC 01 and AC 07:

> *[...] we did that simulation on the patient and then when we arrive there, it doesn't matter if sometimes we don't complete it [...] but as we saw and internalized that, we look at the patient there on the bed and you think what you have to check [...] first I have to check the conscience, then I go down starting from the head, that was very interesting* (Focus Group; AC 01).

> *[...] we took patients similar to the simulation. So I think it helped even more to fix and be able to really put into practice, in the human being, everything that we had done in the simulation* (Focus Group, AC 07).

Some students demonstrated to have appropriated the information from the social environment and, with the collaboration of the Other, they set in motion higher psychological functions that translated into a 'being able to do' in clinical practice, as AC 10 says:

> *When I arrived, I remembered how I had done the evaluation there [refers to the Simulation]. So I arrived and already evaluated the patient [...] for my training, it helped a lot. It was essential* (Focus Group; AC 10).

The students pointed out that the time of fifteen minutes, considered by them as insufficient for clinical evaluation in the simulation, represented a learning opportunity for the establishment of priorities and clinical reasoning, given the similarity of what they found in practice in the real environment.

> *[...] when we had contact for the first time and the environment was strange, so we spent more time, we were a little lost, right? [refers to Simulation]. Now in the clinical practice [...] there are patients that you'll have to evaluate in much less than twenty minutes, you'll have to evaluate the patient in two minutes. And you'll have to enter [...] with all the therapies, you'll have to perform a quick intervention for that patient, you'll [...] have to prioritize*

> *the clinical evaluation. What am I going to evaluate, is it the hemodynamic system, is it the respiratory system, is it consciousness? So, you'll have to act very quickly, you'll have to do it according to the complications that the patient is presenting to you [...]. We see this a lot in the practice* (Focus Group; AC 08).

Another aspect that enabled the application in the clinical practice of the skills learned in the simulation was the fact that it was carried out individually, an aspect analogous to that found in real scenarios.

> *[...] you get here and do it yourself [refers to the Simulation]. So I think you start to incorporate after taking this responsibility of assuming it alone [in the practice], I find this interesting* (Debriefing; AC 01).

However, they recognized that the construction of competences is related to the real practice, but it depends on the collaboration of the Others, who are the professor, the colleagues, and the team of the Unit:

> *[...] you showed us, we did it* (Focus Group, AC 07).
>
> *There was this patient who had a tracheostomy and was still bleeding. Then we (the student and the nursing technician) opened (the dressing): "AC 01, this is the bleeding, look, it's just a small vessel." And it was really just a skin vessel that was bleeding, we cauterized, it stopped* (Focus Group, AC 01).

DISCUSSION

The data from this study allowed us to apprehend that clinical simulation is an instrument that may contribute to the translation of knowledge related to the clinical evaluation of critical patients to the real Intensive Care environment. However, it was observed that it cannot be conceived as a pedagogical strategy based on cause-and-effect assumptions, detached from the historical and cultural conditions of the actors, as much as it does not do without the other who, through the intentionality with which he establishes pedagogical interactions in the simulated scenario and in clinical practice, is co-responsible for the students' learning.[7,14]

Multiple factors interfere with students' learning possibilities, for example, the very conception of Intensive Care as a place of suffering, where patients have little chance of survival.[15] Although the current scenario relies on the evolution of care and technology, it is clear that the meaning of a terrifying environment still permeates people's conceptions,[15] even in the academic and professional settings.

This conception influenced the participants who, when experiencing the Intensive Care Unit for the first time, both in the simulated scenario and in curricular internship activities, shared these meanings and set feelings in motion, some of them negative. However, it is noteworthy that these same conditions have different meanings depending on how the subject appropriates cultural elements in his trajectory to build competence for clinical evaluation.

In this sense, simulation can corroborate it so that students have more exposure to critical scenarios, and develop technical and non-technical skills such as coping mechanisms in the face of complex situations, in order to minimize these stressors,[16] both in the curricular internship and in their transition to professional insertion.

In the Historical-Cultural approach, the new demands offered by the environment establish a confrontation between subject and task, which can boost the intellect for the formation of conceptual thinking,[8] that is, the very difficulties inherent in simulation and real practice can enhance the psychological development, as inferred from the participant observation and the testimony of some academics.

Thus, the opportunity to meet the simulated critical patient and the need to evaluate him, indicated by the other through the objectives of the simulation, causes the subject to mobilize functions so that he can cope with solving the task. In this way it is inferred that, when facing a situation that is not common, the student undertakes a path of articulation of new functions, reorganizes the thinking from the signs that are apparent to him, abstracts and conceptualizes the new experiences.

Thus, the high-fidelity clinical simulation can promote the construction of competences but, in itself, it may not allow for the integral development of the student, which requires the social interactions typical of the clinical practice.[5] The internship emerges, therefore, as a place between the school and work environments, offering the students experiences for the consolidation of learning, either through the appropriation of elements of the environment or through the feedback of mentors, by means of important contextual information available for work tasks.[14]

Thus, the production of knowledge should not be dichotomized between theory and practice, but conceived from the interaction and sharing of knowledge and experiences, which reiterates the importance of the socio-cultural dimension in the learning process.[6,7]

In this perspective, professors stand out as important actors in the learning process, although they are not the only protagonists.[9] This puts in perspective the complexity of teaching and learning clinical skills, such as the assessment of the critically ill patient, since this development is not driven by one or the other factor in isolation and cannot be understood as a linear process. This is because it is not possible to conceive teaching in a reductionist way, as a pragmatic, immediate, and circumscribed action to resolve a conflict situation,[17] as if learning was the result of a cause-effect relationship.

In this understanding, pedagogical strategies that value the plan of the immediate may not provide the achievement of the learning objectives, since students demonstrate through behavior only one of the aspects related to learning.[17]

In this sense, it may not be possible to indicate to what extent the demonstration of the resolution of the task by means

of the simulation will be appropriate in order to be applied again, voluntarily and consciously, in the real situations of the clinical practice that the subject will face. That is, the learning resulting from the simulation is only one of the faces of the possible construction of functions in the subject's developmental history, which may or may not advance to other levels of self-awareness that give the possibility of directing one's own behavior in the real environment, which could be observed in the students' different levels of development after the simulation and during the internship.

Learning strategies that understand human behavior as a product of cause-effect relationships, must give rise to processes that value the mediate plan, which elevates the human being to the quality of being a thinker, whose psychic development enables him to transform nature and consequently, to transform psychic activity itself, dialectically. In this process, by appropriating the elements available in the socio-cultural environment, internalization is possible,[7] as well the development of competence.

It is noteworthy that, in this investigation, simulation can be understood as a psychological instrument for the students. This understanding starts from the assumption that the sign is a tool, a stimulus artificially created by man and used as a means of dominating the behavior, of oneself or of the Other, whose use incurs changes in the psychic scope, in terms of development of functions.[7]

In this way, simulation was an important psychological tool,[7] because it enabled the students, by appropriating the elements provided in the strategy for the management of the outside world, to evaluate and implement care actions for the patients, however at different levels of development.

The reflections from this approach allow for a critical analysis of the pedagogical projects of courses that establish contents in subjects with little articulation between theory and practice, that value the results and not the learning process, given that factors like these can imply difficulties in the translation of knowledge.[18,19]

In addition, the environment itself may participate in learning as a challenge to be faced by the students, and compromise the development of their skills. This is evidenced when the field of practice and the educational institution are not properly articulated in relation to the development of the internship, and when the supervisors are not prepared to receive the student, in such cases there is a gap between theory and hospital practice, which causes insecurity and little autonomy for students.[20,21]

Although many studies demonstrate that simulation contributes to the development of skills,[22-24] there is still the need for more observational studies in order to have indicators of how knowledge is transferred to the clinical practice.[25]

CONCLUSION AND IMPLICATIONS FOR THE PRACTICE

As a psychological instrument in the Historical-Cultural perspective, simulation contributed to the development of the students' higher psychological functions to evaluate and implement care actions in a real intensive care setting.

This instrument cannot be conceived in isolation and disjointed from interrelated factors that occur in the socio-cultural field and that imply human development trajectories.

Previous experiences, both personal and related to the academic training process, must be taken into account when planning the simulation, so that the professor can provide the students with steps up to the different levels of development, particular to their singularities, and aiming at the construction of skills.

In this understanding, a limitation of this study is that it does not investigate experiences prior to graduation that could possibly participate in this process.

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AUTHOR'S CONTRIBUTIONS

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